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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,539	12/05/2003	Jason Charles Pelly	282557US8X	8289
22850 7590 09/23/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER HOANG, DANIEL L				
ART UNIT 2436		PAPER NUMBER		
NOTIFICATION DATE 09/23/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/728,539

Applicant(s)

PELLEY ET AL.

Examiner

DANIEL L. HOANG

Art Unit

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-15, 17, 18, 21, 22, 24 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-15, 17, 18, 21, 22, 24 and 26-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

RESPONSE TO ARGUMENTS

Applicant's arguments, see Arguments/Remarks, filed 8/18/10, with respect to the rejection(s) of claim(s) 1, 11, 17, and 21 under 35 USC 103(a) have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ehrmann Patin, US Patent No. 7013023

CLAIM REJECTIONS

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-4, 7, 10-14, 17-18, 21-22, and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Muratani, US Patent No. 20060023913, and further in view of Ehrmann Patin, US Patent No. 7013023, hereinafter Patin.

As per claim 1, 11, 17, 21-24, Muratani teaches:

A data processing apparatus operable to identify a code word present in a marked version of a material item, the material item composed of a plurality of units and the code word composed of a plurality of parts, each part including different data from the code word, the marked version formed by combining each of the plurality of parts of the code word with one of the plurality of units, the apparatus comprising:

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a recovery processor operable to recover a partial code word composed by at least one of the plurality of parts of the code word from at least one of the plurality of corresponding units of the marked material item, and

[see paragraph 94, wherein the assumed sequence seed is deemed analogous to the claimed "partial code word composed by at least one of a plurality of parts of the code word"
[the content embedded with the watermark is viewed as the claimed "marked material item"]
[the assumed sequence seed is generated from the division of the detection objective content and each of the shifted contents into blocks]

a correlator operable to generate for the marked material item a dependent correlation value by correlating the partial code word a corresponding partial stored code word that is part of a whole stored code word, and

[see paragraph 94, wherein a correlation value of the original content as well as objective content is generated]

a detector operable to determine whether the whole stored code word is present in the marked material item based on the dependent correlation value for the partial code word exceeding a predetermined threshold, wherein

[see paragraph 94, the correlation value is compared against a preset reference value]

when the dependent correlation value does not exceed the predetermined threshold the correlator is operable to iteratively increase a number of parts of the code word used to, to increase information quantity of the recovered partial code word,

[see paragraph 96, wherein the processing is repeated until it is determined that the sequence of the numbers is superimposed on the objective content]

each time the information quantity of the partial code word is increased, the correlator is operable to generate a dependent correlation value by correlating the partial code word having increased information quantity with a corresponding partial stored code word, the iterative increasing of the information quantity of the partial code word continuing until the whole code word is recovered by the recovery processor and correlated with the whole stored code word by the correlator or the predetermined threshold exceeded.

[see fig. 12, step s16, wherein if the sequence is not yet found, the process is repeated and a new sequence is added to the already generated sequence(s).

The Muratani reference has been discussed above. Muratani does not teach that the watermark is iteratively increased in its number of parts, instead the encoded content is sequentially correlated with a number of different watermarks until the one which the content has actually been encoded with is identified. In order to teach the limitation of a correlator operable to iteratively increase a number of parts of the partial code word used in order to recover the original code word (watermark), examiner relies on the Patin reference.

Patin teaches at col. 11, lines 5-25, a decoding method, wherein the decoding step performs a partial decoding operation by decoding the received digital data by means of an iterative decoder, and applying a decoding iteration or a decoding half-iteration so as to obtain a partially decoded watermarked digital signal, and wherein said modifying step comprises the steps of: performing a quality testing operation by testing whether the quality of the extracted watermark is satisfactory; and performing an additional decoding iteration or half-iteration when the quality testing is not satisfactory, so as to finally obtain the optimum number of decoding iterations or half-iterations to be applied as a parameter of the decoding operation.

Examiner views this process to be analogous to applicant's claimed "iterative increase a number of parts of the partial code word used, to increase information quantity of the partial code word". It would have been obvious to one of ordinary skill in the art to modify the Muratani reference to include the above process taught by Patin in order to minimize the number of iterations in order to save calculation time and gain in speed while keeping a good quality of decoded data (Patin, col. 1, lines 55-62).

As per claim 2, 12, Muratani teaches:

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A data processing apparatus as claimed in claim 1, wherein the detector is operable in combination with the correlator to form a dependent correlation value for a plurality of parts of the recovered code word, and if the correlation value exceeds the predetermined threshold for one of the dependent correlation values, the detector is operable to identify the code word as present according to a predetermined false detection probability.

[see paragraph 96]

As per claim 3, 4, 13, 14, Muratani teaches:

A data processing apparatus as claimed in claim 2, wherein the detector is operable in combination with the correlator to form the dependent correlation values by combining the parts of the code word recovered from successive material units, and by correlating the parts formed from successive material units with corresponding part of the regenerated code word.

[see fig. 12, elements s16 and s13]

As per claim 5 and 15:

A data processing apparatus as claimed in claim 1, wherein the correlator is operable under control of the detector to combine the parts of the code word recovered from a first plurality of successive units, and to form the dependent correlation value for the combined parts, the detector being operable to detect the code word if the dependent correlation value exceeds the predetermined threshold and otherwise to combine the parts of the code word recovered from a second plurality of successive units, the number of units corresponding to the first plurality, and to form the dependent correlation value for the combined parts, the detector being operable to detect the code word if the dependent correlation value exceeds the predetermined threshold and otherwise to combine the parts of the code word recovered from the first plurality of successive units with parts of the code word recovered from the second plurality of successive units, and to form the dependent correlation value for the combined parts, the detector being operable to detect the code word if the dependent correlation value exceeds the predetermined threshold and otherwise to combine the parts of the code word recovered from a third plurality of successive units, and

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to form the dependent correlation value for the combined parts, the detector being operable to detect the code word if the dependent correlation value exceeds the predetermined threshold and otherwise to combine the parts of the code word recovered from a fourth plurality of successive units, the number of units corresponding to the third plurality, and to form the dependent correlation value for the combined parts, the detector being operable to detect the code word if the dependent correlation value exceeds the predetermined threshold and otherwise to combine the parts of the code word recovered from the third plurality of successive units with parts of the code word recovered from the fourth plurality of successive units, and to form the dependent correlation value for the combined parts, the detector being operable to detect the code word if the dependent correlation value exceeds the predetermined threshold and otherwise to form iteratively the first, second, third and fourth plurality of parts of the recovered code word, and to determine whether the dependent correlation value exceeds the threshold.

The claim language cites a plurality of combinations of successive units, specifically 6 combinations including 6 partial code words and their respective preceding and successive units. The Patin reference has been discussed above to teach iteration. Patin teaches that the decoding iterations are performed until a satisfactory quality is formed (see col. 11, lines 15-25). While Patin does not specifically cite 6 iterations, examiner views it would have been obvious to perform any number of iterations necessary until a satisfactory quality is formed.

As per claim 7, Muratani teaches:

A data processing apparatus as claimed in claim 1, wherein the detector and the correlator are operable in combination to form the dependent correlation value for at least one selected code word re-generated from the set of code words, the code word being selected from the set in accordance with the relative magnitudes of the dependent correlation value formed for each code word of the set.

[see paragraphs 103-105]

As per claim 8, Muratani teaches:

A data processing apparatus as claimed in claim 1, wherein the plurality of code words are formed from a first code word having a plurality of predetermined pseudo-randomly distributed coefficients and by generating other code words of the set by cyclically shifting the first code word, and the correlation value is formed for a plurality of the code words by forming a Fourier transform of the recovered code word, forming a Fourier transform of the first code word of the set, forming the complex conjugate of one of the Fourier transform of the recovered code word and the Fourier transform of the regenerated code word, forming intermediate product samples by multiplying each of the Fourier transform samples of the recovered code word and the corresponding Fourier transform samples of the first code word, forming correlation samples by forming an inverse transform of the intermediate product samples, each of the correlation value samples providing the correlation value for one of the set of code words, wherein the forming a Fourier transform of the part of the recovered code word comprises setting the remaining part of the recovered code word to zero, and forming the Fourier transform of the recovered code word, and the forming a Fourier transform of the first code word of the set comprises setting the remaining part of the first code word to zero, and forming the Fourier transform of the first code word.

[see paragraph 148]

As per claim 9, Muratani teaches:

A data processing apparatus as claimed in claim 1, wherein the code word has been introduced into the material item in the discrete cosine transform domain, the apparatus comprising a discrete cosine transform processor operable to transform the marked material item and the original material item into the discrete cosine transform domain, wherein the recovery processor is operable to generate the recovered code word by subtracting corresponding discrete cosine transform coefficients of the original material version from discrete cosine transform coefficients of the marked material version.

[see col. 8, lines 49-67]

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As per claim 10, Muratani teaches:

A data processing apparatus as claimed in claim 1, wherein the material is video material, the material units being video images.

[see paragraph 5]

As per claim 18, Muratani teaches:

An encoding data processing apparatus as claimed in claim 17, wherein the plurality of code words are formed from a first code word having a plurality of predetermined pseudo-randomly distributed coefficients and by generating other code words of the set by cyclically shifting the first code word.

[see paragraph 60]

As per claims 26-29:

The data processing apparatus according to Claim 1, wherein the iterative increasing of the number of code word parts used increases the number by a factor two for each increase.

[see rejection of claim 1, wherein Patin teaches that a half-iteration corresponds to passing data through one decoder. Examiner views half-iterations as analogous to the claimed "increases the number by a factor two".]

1. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muratani and Patin as applied to claim 1 above, and further in view of Shimizu, US Patent No. 6971012..

As per claims 8 and 9:

The Muratani reference has been discussed above. Muratani is mute in teaching that the code words are formed by forming a Fourier transform or a discrete cosine transform of the recovered partial code word

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or the code word set. The Shimizu reference is relied upon to teach transformations using a Fourier transform or a discrete cosine transform (see col. 8, lines 49-67).. While Muratani teaches a transformation to the code words, he does not explicitly cite the type of transform. Examiners views based on applicants specification that the type of transform used is merely a matter of design choice and that it would have been obvious to one of ordinary skill in the art to modify the Muratani reference in order to make use of a Fourier transform or a Discrete cosine transform.

CONCLUSION

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

POINTS OF CONTACT

*. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

*. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Hoang whose telephone number is 571-270-1019. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Daniel L. Hoang/
Examiner, Art Unit 2436
/Eleni A Shiferaw/
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